S/126/62/014/001/005/018
E111/E135

AUTHORS: Belous, M.V., and Cherepin, V.T.

TITLE: Changes in the carbide phase under the influence of cold plastic deformation.

PERIODICAL: Fizika metallov i metallovedeniye, v.14, no.1, 1962, 48-54

TEXT: The laws are studied which govern the changes in the carbide phase and graphitization during plastic deformation and subsequent heating of the steels У12А (U12A), У10А (U10A), У8А (U8A), У7 (U7) and 60, with carbon contents of 1.19 to 0.60%. Magnetometric and dilatometric methods were used for the main investigations; the changes in the average composition of the carbide-phase region were also calculated. The results indicate that the action of cold plastic deformation on the austenite is as follows. The cementite particles are crushed and some of them decompose and break down, resulting in the formation of free carbon and iron which leads to increasing magnetization of the steel. The carbon atoms surround the remaining cementite

Card 1/2

particles; a possibly important factor here is the attraction of impurity atoms to structural imperfections and the cementite/alpha-phase boundary. Some of the carbon atoms surrounding the cementite plates penetrate inside the crystal lattice of the carbide, leading to a change in its Curie point. When the deformed steel is heated, the carbon atoms acquire a high mobility and can react with each other and with iron atoms. The first leads to formation of graphite regions, this being facilitated by the presence in the alloy of micropores formed during plastic deformation. The second leads to reformation of cementite and a decrease in the magnetization of the steel. There are 5 figures.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut
(Kiev Polytechnical Institute)

SUBMITTED: November 26, 1961

IX 7500 ,

S/126/62/014/002/017/018
E071/E435

AUTHORS: Belous, M.V., Cherepin, V.T.

TITLE: Changes in the carbide phase of steel under the influence of cold plastic deformation

PERIODICAL: Fizika metallov i metallovedeniye, v.14, no.2, 1962, 312-314

TEXT: This is a continuation of previous work (FMM - in print) in which it was shown that on plastic deformation of highly annealed steel a partial decomposition of the carbide phase with the formation of free carbon and iron takes place. On subsequent heating the graphitization of the carbide phase will set in but a part of the free carbon will again combine with iron to form cementite; the results of magnetic and dilatometric analyses were in good agreement, at least up to a medium degree of deformation. In the present investigation, the behaviour of a coarse platelike pearlite obtained by annealing specimens of У12А (U12A) steel (1.19% C, 0.02% Cr, 0.24% Mn, 0.25% Si, 0.10% Ni, 0.020% S, 0.011% P) in charcoal at 1000°C was studied. Cold plastic deformation was produced by drawing through dies.

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Changes in the carbide phase ...

The experimental method was the same as previously. Analysis of thermomagnetic curves and calculations show that with an increasing degree of plastic deformation the cementite decomposes into iron and chemically free carbon. On subsequent reheating a considerable part of the cementite will graphitize. From the decrease in the cementite effect on thermomagnetic cooling curves, the degree of graphitization was calculated. The presence of an irreversible decrease in the degree of magnetization on heating in the range 300 to 600°C indicates partial reconstitution of the cementite. Reannealing at 950°C in a neutral medium brought about the reconstitution of the initial cementite effect and of the initial microstructure. The dilatometric curves gave an unexpected result - a decrease in specific volume after the cycle: heating to 600°C - cooling to room temperature. This indicates that plastic deformation of a coarse plate structure is accompanied by the formation of a large number of micropores and microcracks. Heating of little deformed specimens brings about healing of the microcracks and a decrease in specific volume. At high deformations the graphitization is speeded up and the

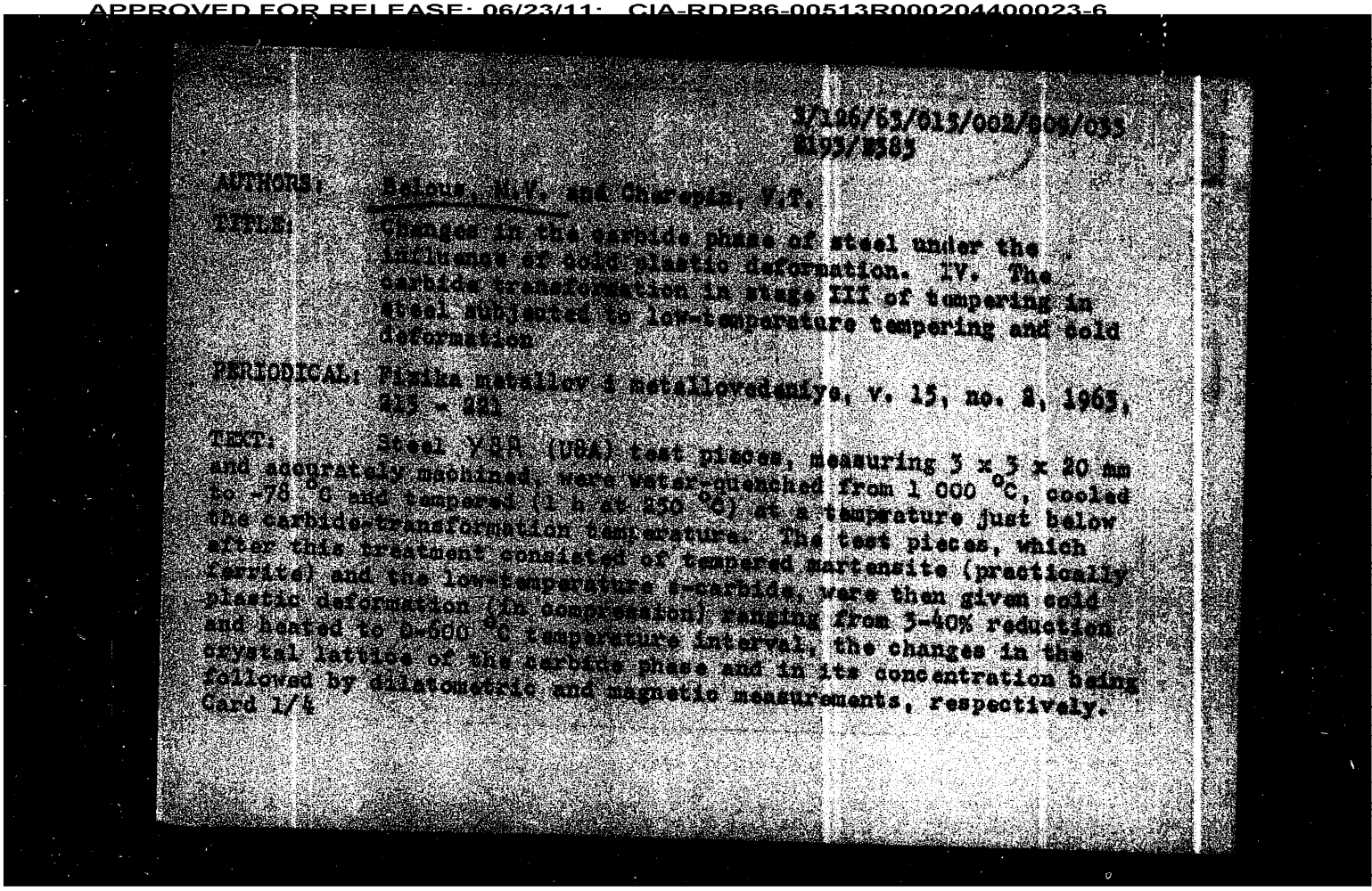
microcracks can become places of separation of carbon in the form of graphite. There are 3 figures.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut
(Kiyev Polytechnical Institute)

SUBMITTED: February 14, 1962

Card 3/3

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204400023-6



2/126/63/015/002/009/033
E193/E383

AUTHORS: Belous, M.V. and Cherepin, V.T.

TITLE: Changes in the carbide phase of steel under the influence of cold plastic deformation. IV. The carbide transformation in stage III of tempering in steel subjected to low-temperature tempering and cold deformation

PERIODICAL: Fizika metallov i metallovedeniye, v. 15, no. 2, 1963, 213 - 221

TEXT: Steel YeI (U8A) test pieces, measuring 3 x 3 x 20 mm and accurately machined, were water-quenched from 1 000 °C, cooled to -78 °C and tempered (1 h at 250 °C) at a temperature just below the carbide-transformation temperature. The test pieces, which after this treatment consisted of tempered martensite (practically ferrite) and the low-temperature ε-carbide, were then given cold plastic deformation (in compression) ranging from 3-40% reduction and heated to 0-600 °C temperature interval, the changes in the crystal lattice of the carbide phase and in its concentration being followed by dilatometric and magnetic measurements, respectively.

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The effect of cold plastic deformation on the temperature-dependence of the volume and magnetic properties of the test pieces studied was interpreted in the following manner. Cold deformation of steel U8A, hardened and tempered at 250 °C, brought about fragmentation of the ε-carbide particles, some of which became decomposed. The latter process, accompanied by the formation of free ferrite, increased the intensity of magnetization and, as a result of the reduced quantity of the ε-phase, decreased the magnitude of the volumetric effect in stage III of the transformation. The carbon produced by decomposition of the ε-phase was in a specific state inasfar as it was neither combined with iron nor agglomerated in the form of graphite particles. When cold-worked test pieces were heated, the still-existing ε-phase particles were transformed into cementite. Some of the free carbon atoms interacted with iron to form cementite, this process being accompanied by a change in the intensity of magnetization of the steel (the so-called 'magnetic X-effect'). The remaining free carbon atoms diffused, agglomerated and formed microvolumes of graphite. This process did not affect the magnetic properties of steel but

decreased the quantity of cementite in the steel. The higher the concentration of "free" carbon atoms which form cementite, the more pronounced were the magnetic and cementite effects in stage III of the transformation and the lower the degree of graphitization. The results of analytical treatment of the dilatometric and magnetic measurements are reproduced in Fig. 4, showing the effect of plastic deformation (ψ , %) on the state of the carbide phase in steel U8A, tempered at a low temperature, curves 1-6 representing: 1 - change in the dilatometric effect in stage III of tempering; 2 - increase in the intensity of magnetization after cold deformation; 3 - change in the magnetic effect in stage III of tempering (dots) and at the A_0 point (circles); 4 - degree of graphitization of steel; 5-6; degree of decomposition of the α-phase during cold deformation, calculated, respectively, from the magnetic and dilatometric data. It is pointed out in the conclusion that the results of the present work demonstrate again the fallacy of the view (A.P. Gulyayev and N.I. Bureva - Metallovedeniye i obrabotka metallov, 1955, no. 1) that the volumetric effect in stage III of the tempering of steel is associated with recrystallization of the α-phase. Since

Changes in the carbide phase ... S/126/63/015/002/009/033
B193/B383

Preliminary plastic deformation brings about a decrease in the volumetric effect observed on subsequent heating, the above explanation is not acceptable. There are 4 figures.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiyev Polytechnical Institute)

SUBMITTED: May 22, 1962

Card 4/4 Fig. 4:

BELOUS, M.V.; GRANKINA, L.P.; PERMYAKOV, V.G.; SEVERYANINA, Ye.N.

Electric properties of thin nichrome films. Fiz. met. i metalloved. 16 no.5:669-674 N '63. (MIRA 17:2)

1. Kiyevskiy politekhnicheskiy institut.

APAYEV, B.A.; BELOUS, M.V.; PERMYAKOV, V.G.

Calculating the additive properties of alloys during quantitative phase analysis. Fiz. met. i metalloved. 17 no.2:289-292 F '64.
(MIRA 17:2)

1. Kiyevskiy politekhnicheskiy institut i Gor'kovskiy fiziko-tekhnicheskiy institut.

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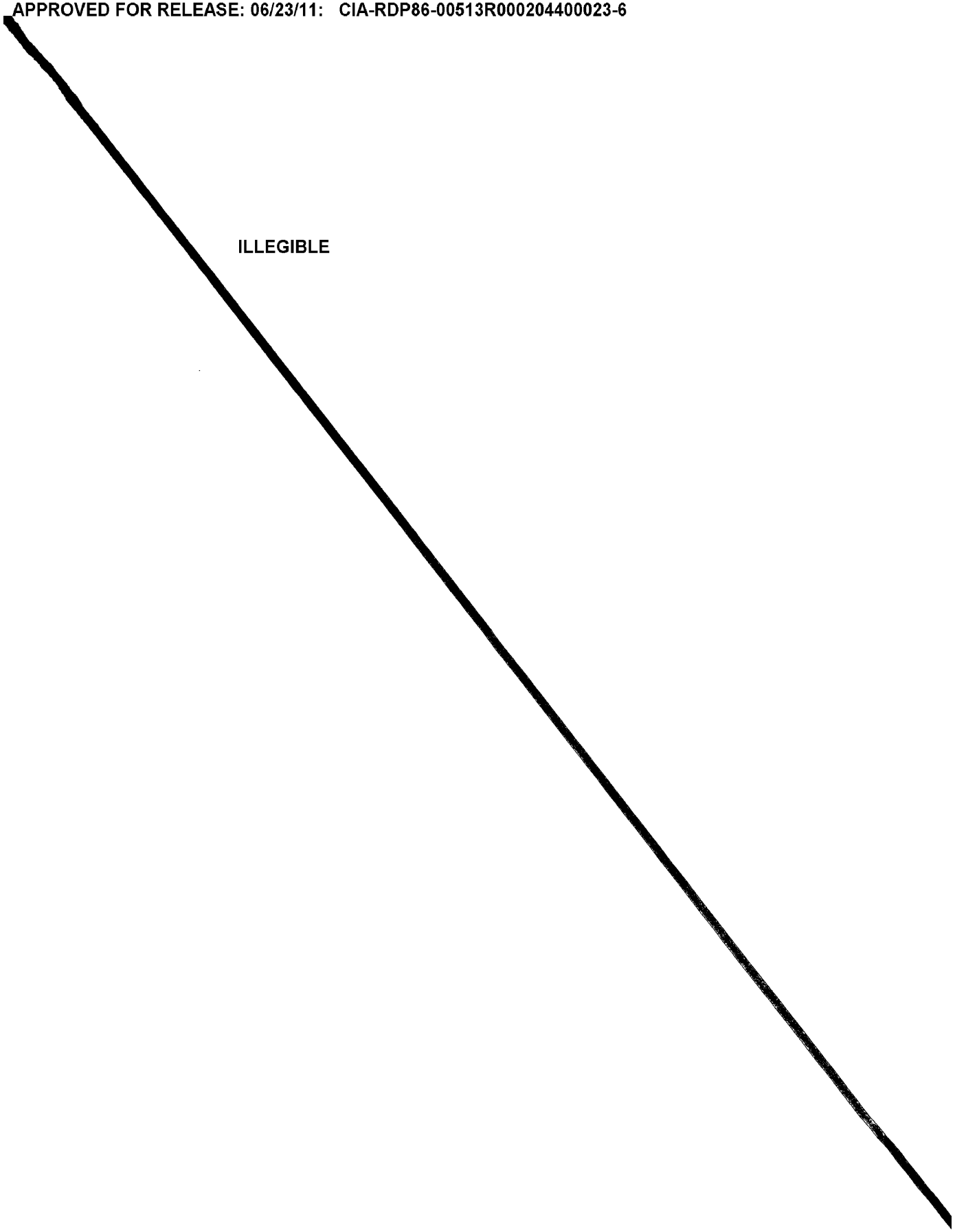

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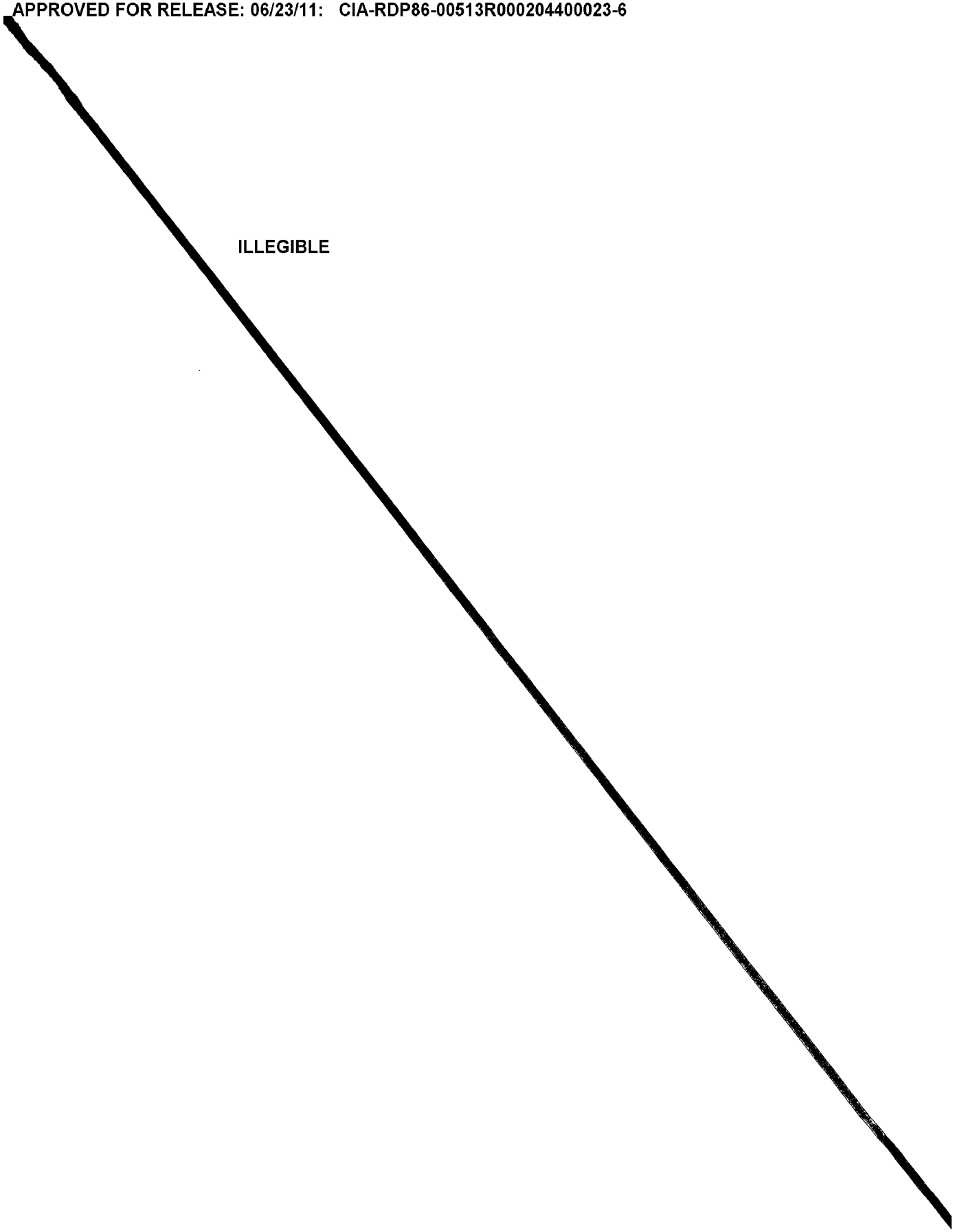

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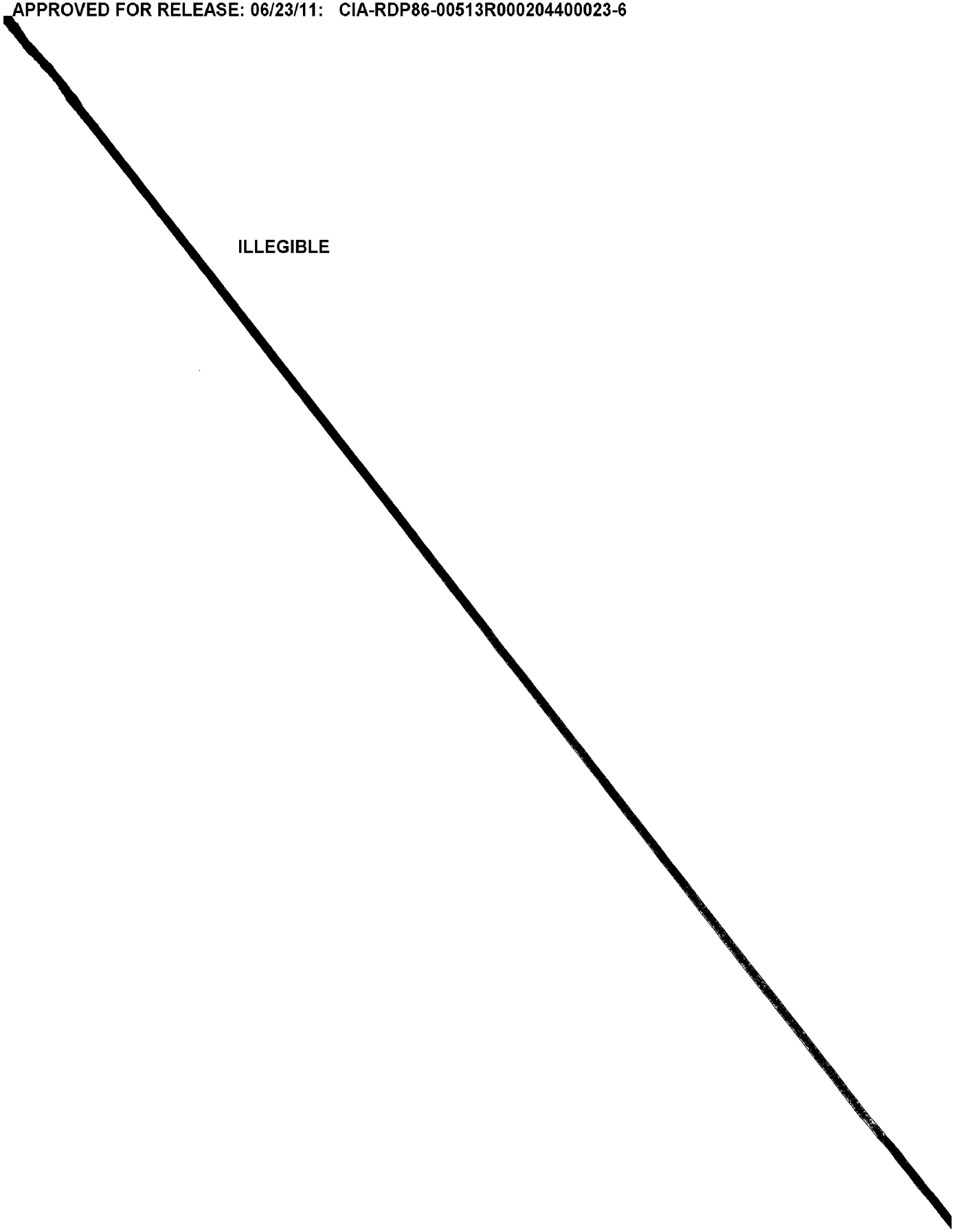

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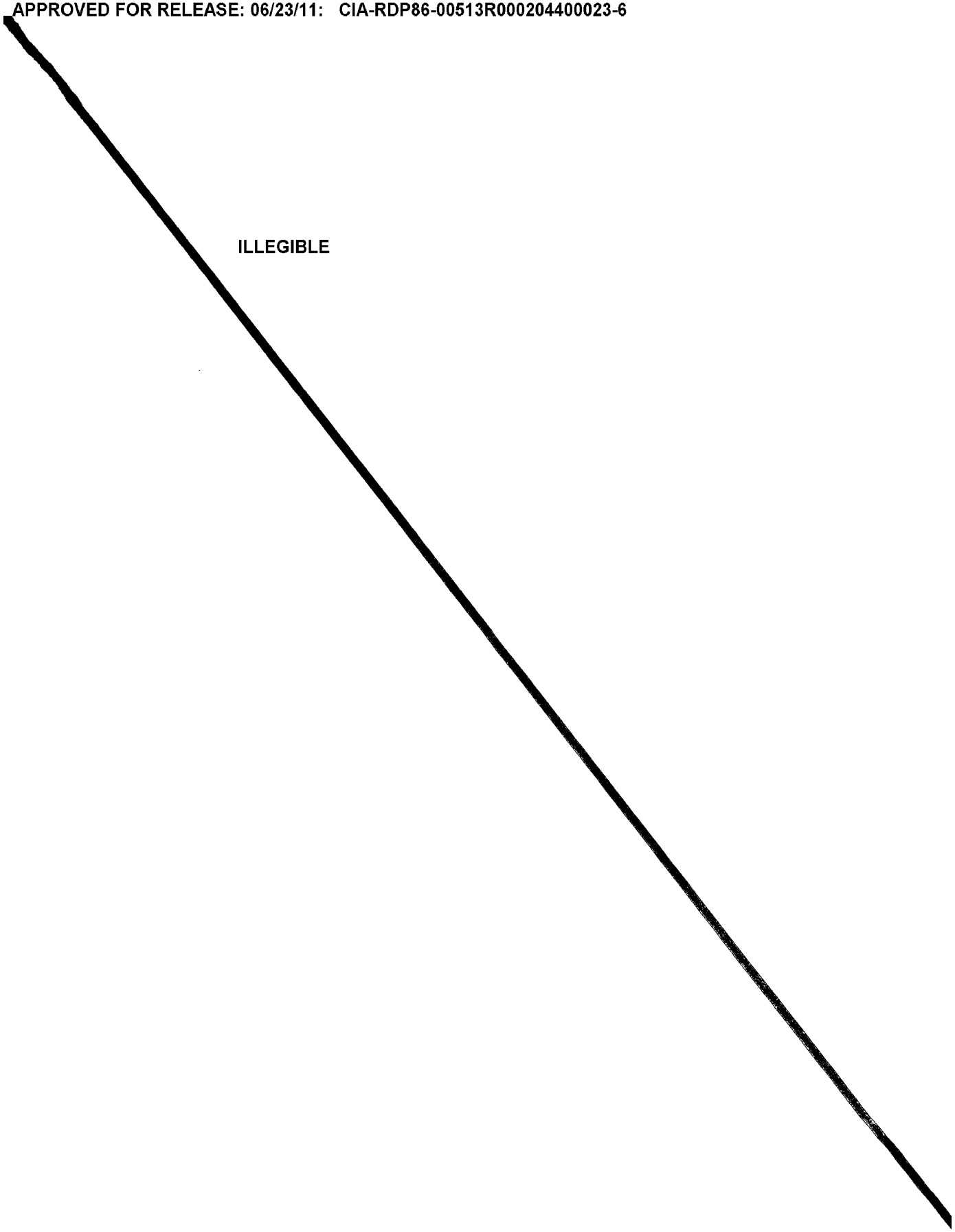

BELOUS, M.V.; PERMYAKOV, V.G.; TITARENKO, S.V.

Carbide transformation during the tempering of silicon steel.
Izv. vys. ucheb. zav.; chern. met. 8 no.9:171-174 '65.
(MIRA 18:9)

1. Kiyevskiy politekhnicheskiy institut.

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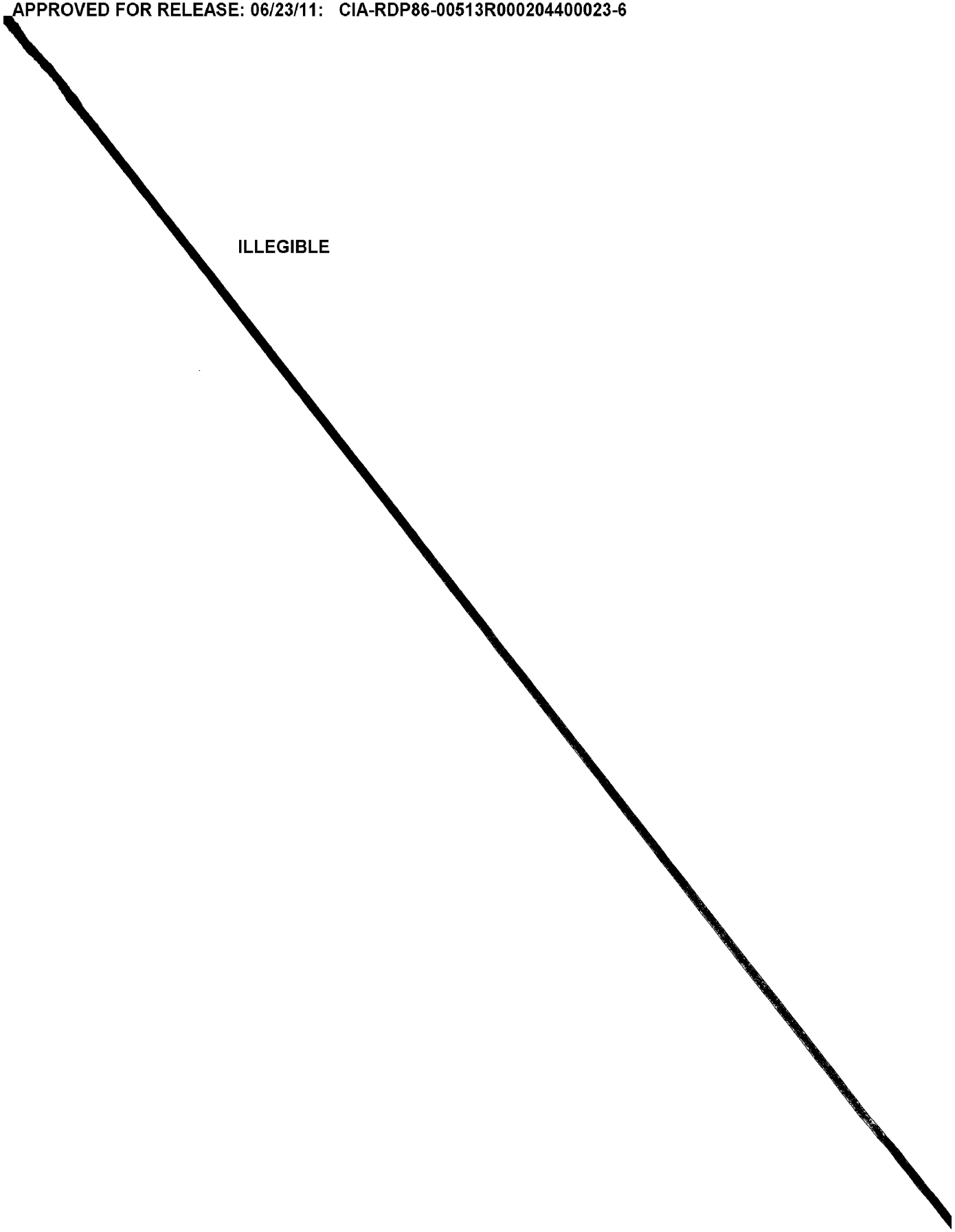

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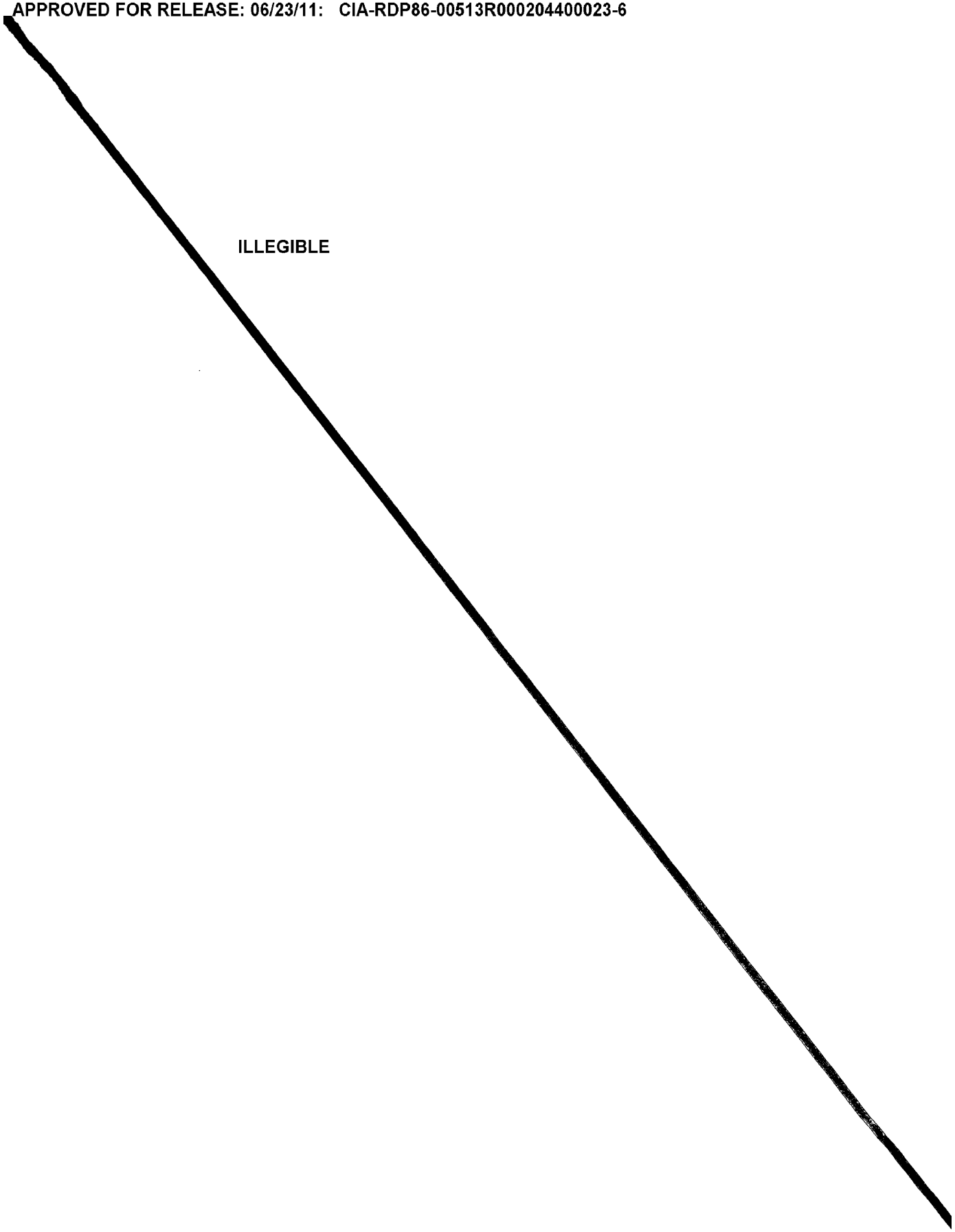

BELOUS, M.V.; MUL'TAKH, L.M.; PERMYAKOV, V.G.

Carbide transformations during the rapid deformation of 45 steel. Fiz.-met. i metalloved. 20 no.5:728-732 N '65. (MIRA 18:12)

1. Kiyevskiy politekhnicheskiy institut. Submitted November 10, 1964.

L 36855-66 EWT(d)/EWT(m)/EWP(l)/EWP(t)/ETI IJP(c) GG/BB/JD

ACC NR: AP6023424 SOURCE CODE: UR/0139/66/000/003/0169/0173

AUTHOR: Belous, M. V.; Kocheshkov, V. P.; Permyakov, V. G.

ORG: Kiev Politechnical Institute (Kiyevskiy politekhnicheskiy institut)

TITLE: Compact machine for producing thin-film elements

SOURCE: IVUZ. Fizika, no. 3, 1966, 169-173

TOPIC TAGS: microelectric thin film, semiconducting film, metal deposition, metal film, physics laboratory instrument

ABSTRACT: A relatively simple and compact machine for producing thin-film elements is described. This machine makes it possible to obtain thin metallic or semiconductor films by vaporization in a vacuum, to control the electric resistance of metallic films, to deposit protective coatings on thin films, and to effect the thermal processing of thin films in a vacuum. In the proposed machine (see Fig. 1), the cylindrical housing (height, 160 mm; inner diameter, 80 mm) is attached directly to an oil-vapor pump. The film-producing section is mounted on current-carrying supports passing through the cover of the cylinder. The clamps of the conical vaporizer, which is made of tungsten wire 0.5—0.8 mm in diameter, are attached to these supports. A metallic plate (72 x 30 x 3 mm) positioned horizontally above the vaporizer, has a rectangular depression containing a heater. A mica or glass substrate on which the thin film is deposited is pressed against this heater. The shape of the thin-film elements

Card 1/3

L 36855-66

ACC NR: AP6023424

3

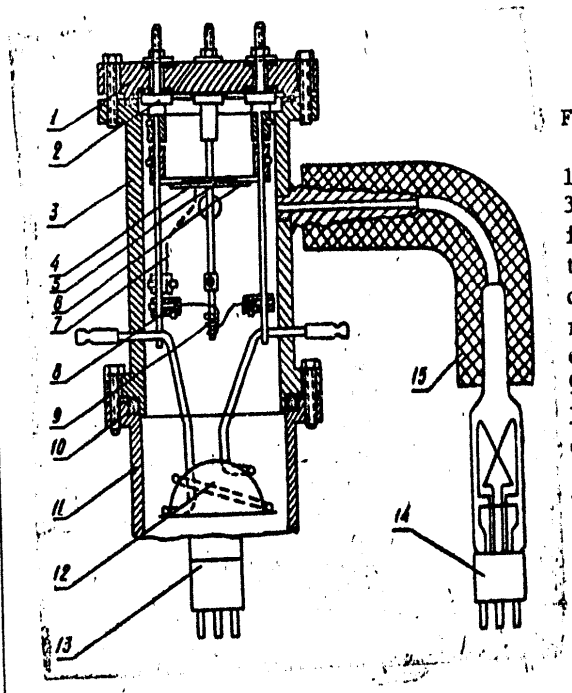

Fig. 1. Schematic drawing of the machine

1 - Cover; 2 - current carrier (support); 3 - housing; 4 - substrate heater; 5 - insulating spacer; 6 - substrate on which thin films are deposited; 7 - current carrier in the circuit for measuring the resistance of thin films; 8 - current carrier (holder) in the vaporizer circuit; 9 - tungsten vaporizer; 10 - rubber spacer; 11 - oil-vapor pump housing; 12 - cooled oil seal; 13 - VLM-2 pressure gage tube; 14 - LT-2 pressure gage tube; 15 - vacuum hose.

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L 36855-66

ACC NR: AP6023424

is determined by the shape of cutouts in a metallic mask. Five thin-film elements, 16 mm long and 3 mm wide, can be deposited simultaneously. Before depositing the thin films, another mask is attached which leaves 3 x 3 mm squares exposed at each end of the elements. Silver contacts, about 1 mm thick, are deposited on the substrate. The upper mask is then removed and flexible copper contacts are pressed against the silver ones. The metal or alloy from which the thin films are to be made is placed in the tungsten vaporizer, and an ohmmeter is coupled to the clamped contacts. The conditions of deposition are determined by the current flowing through the vaporizer. The thin films acquire stable properties only after thermal processing in a vacuum (up to 10^{-5} mm Hg) at a temperature approaching the recrystallization temperature of the metal deposited. Orig. art. has: 4 figures. [JR]

SUB CODE: 11,09/ SUBM DATE: 10Jul64/ ORIG REF: 003/ ATD PRESS: 5040

Card 3/3

ACC NR: AR6035113 SOURCE CODE: UR/0147/66/000/008/I089/I089

AUTHOR: Belous, M. V.; Permyakov, V. G.; Popov, V. I.

TITLE: Unit for preparing thin layer of metal by vacuum evaporation with electrical resistance control during evaporation and heat treatment

SOURCE: Ref. zh. Metallurgiya, Abs. 8I619

REF SOURCE: Vestn. Kiyevsk. politekhn. in-ta. Ser. makhan.-tekhnol., no. 2, 1965, 114-121

TOPIC TAGS: metal layer, evaporation, vacuum evaporation, metal film

ABSTRACT: Description is given of a unit for obtaining thin coatings of metal by vacuum evaporation at $\sim 1 \cdot 10^{-5}$ mm of Hg and with a device for the analysis of their electrical properties consisting of a vacuum and mechanical systems, an electric circuit and a circuit for measuring electrical resistance by compensation. The mechanical system includes a casette for a backing, a heater, a disk with face guards (one for applying the film contacts measuring 5 x 5 mm and two for the film elements), and a contact device. Mica and glass plates measuring 55 x 35 mm and

Card 1/2 UDC: 669.017:66.048.5

ACC NR: AR6035113

~2 mm in thickness are used as the backing. It is also possible to apply a thin layer on the fragment of rock salt using a wire net as the backing. W or Mo conic type helices serve as the vaporizers. The distance between the vaporizer and the backing may be varied from 50 to 150 mm. The system described will permit application of film elements of variable width with controlled electrical resistance during production, using either a heated or cold nonconducting backing. V. Ferenets. [Translation of abstract] [AM]

SUB CODE: 13/

Card 2/2

[illegible], V., kapitan 1-go ranga; BELOUS, N., kapitan 2-go ranga

[illegible] a businesslike way, in the Leninist way. Komm. Vooruzh. Sil 46 no.23:38-42 D '65. (MIRA 18:12)

BELOUS, N., kapitan 2 ranga

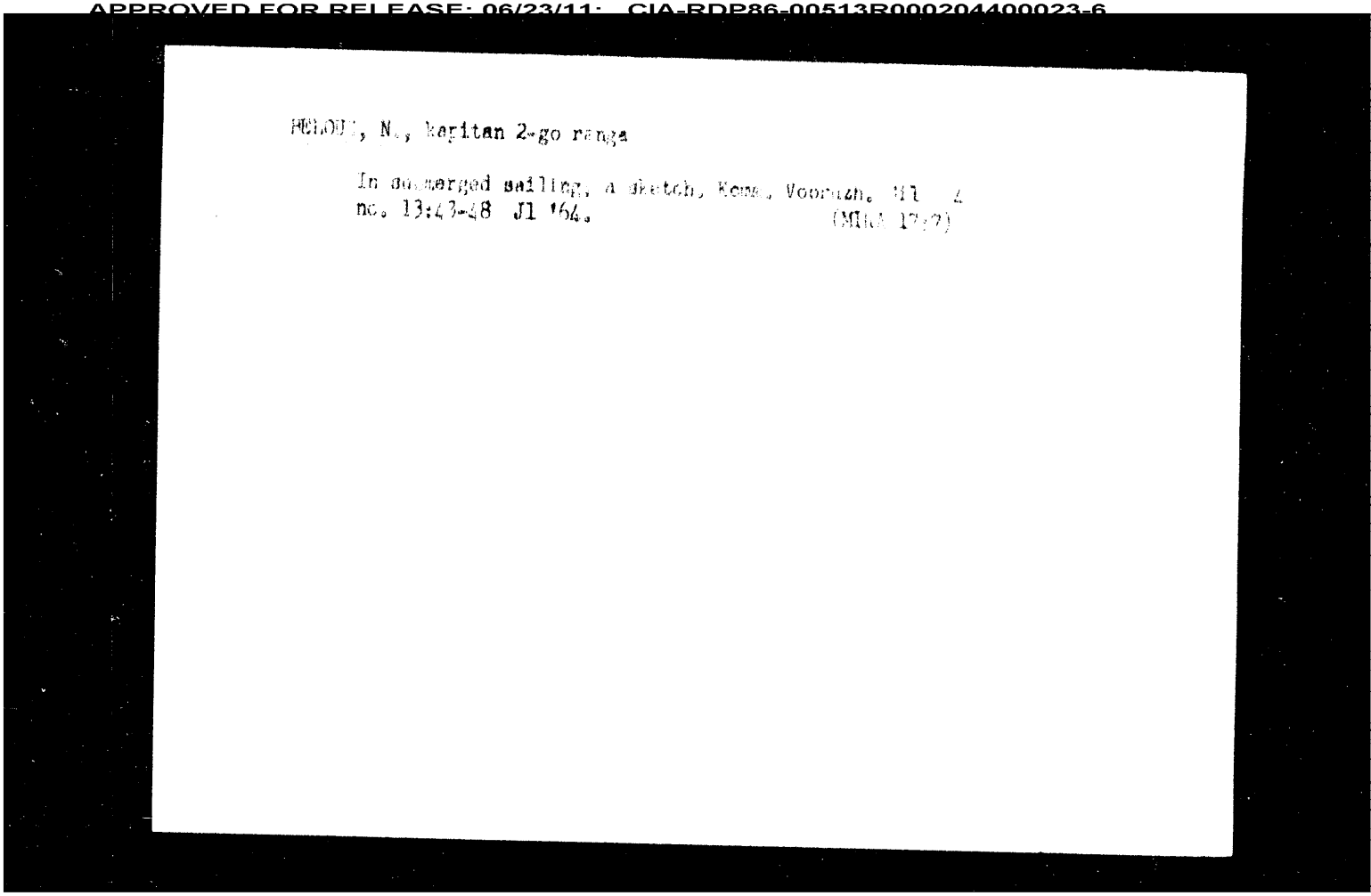
Master of technical means. Voen. znan. 41 no.10:8 O '65.
(MIRA 18:10)

BELOUS, N., kapitan 2-go ranga

Masters of the sea depths. Komm. Vooruzh. Sil. 3 no.13:50-54
Jl'63 (MIRA 17:7)

BELOUS, N., kapitan 2-go ranga.

What disturbs the young commander of a platoon. Komm. Vooruzh. Sil 4 no. 19:66-70 O '63. (MIRA 17:7)



MELOD', N., kapitan 2-go ranga

In submerged sailing, a sketch. Kons. Voorush. Zil 4
no. 13:43-48 Jl '64. (MIRA 17:7)

BELOUS, N., kapitan 2-go ranga

Against overcautiousness, for initiative. Komm. Vooruzh. Sil 46 no.7:55-57 Ap '65. (MIRA 18:5)

BELOUS, N., kapitan 2-go ranga

Exactingness and sensitiveness. Komm. Vooruzh. Sil 46 no.10: 31-36 My '64. (MIRA 18:6)

KOZENKO, K.M., inzh.; KRYLOV, A.I., inzh.; BELOUS, N.G., inzh.

New techniques used in manufacturing warp-knitted artificial furs. Izv.vys.uchseb.zav.; tekh.leg.prom. no.6:75-85 '58. (MIRA 12:4)

1. TSentral'naya nauchno-eksperimental'naya laboratoriya trikotazhnoy promyshlennosti Gosplana USSR.
(Fur, Artificial)

KOZENKO, K.M.; KRYLOV, A.I.; BELOUS, N.G.

Developing the technology of knitting pile fabrics for artificial fur. Tekst.prom. 19 no.1:44-47 Ja '59. (MIRA 12:1)
(Knitting, Machine) (Fur, Artificial)

KUDIN, B.D., inzh.; BELOUS, N.I., inzh.

Self-correcting electric depth indicator for mine hoists. Ugol' Ukr. 4 no.1:28-29 Ja '60. (MIRA 13:5)
(Mine hoisting) (Automatic control)

VED', Ye.I., kand.tekhn.nauk; TERESHCHENKO, L.Ye., inzh.; SVIRIDOV, V.A., inzh.; BELOUS, M.I., inzh.

Binding properties of asbestos cement wastes and their use in producing heat-insulating materials. Stroi.mat. 9 no.9:35-36 S '63. (MIRA 16:10)

USSR/ Geology

Card 1/1 : Pub. 22 - 39/47

Authors : Belous, N. Kh.

Title : The periods of sedimentary iron-ore deposits in southern parts of west Siberia and the Krasnoyarsk Region

Periodical : Dok. AN SSSR 99/1, 149-151, Nov 1, 1954

Abstract : Geological-genetic data regarding the periods of sedimentary iron-ore deposits in southern parts of west Siberia and the Krasnoyarsk Region of USSR are presented.

Institution : ...

Presented by : Academician D. V. Nalivkin, August 14, 1954

BELOUS, N.Kh.

Methods for making large scale maps of shallow-water formations.
Trudy Gor.-geol. inst. Zap.-Sib. fil. AN SSSR no.18:101-115 '56.
(MIRA 13:11)

(Geology, Economic--Maps)

POSPELOV, G.L., starshiy nauchnyy sotrudnik; LAPIN, S.S.; BELOUS, N.Kh.; KLYAROVSKIY, V.M.; KINE, O.G.; VAKHRUSHEV, V.A.; SHAPIRO, I.S., starshiy nauchnyy sotrudnik; KALUGIN, A.S.; MUKHIN, A.S.; GARNETS, N.A.; SPEYT, Yu.A.; SELIVERSTROVA, M.I.; RUTKEVICH, V.G.; BYKOV, G.P.; NIKONOV, N.I.; SAKOVICH, K.G.; MEDVEDKOV, V.I.; ALADYSHKIN, A.S.; PAN, F.Ya.; RUSANOV, M.G.; YAZBUTIS, E.A.; ROZHDESTVENSKIY, Yu.V.; SAVITSKIY, G.Ye.; PRODANCHUK, A.D.; LYSENKO, P.A.; LEBEDEV, T.I.; KAMENSKAYA, T.Ya.; MASLENNIKOV, A.I.; PIPAR, R.; DODIN, A.L.; MITROPOL'SKIY, A.S.; LUKIN, V.A.; ZIMIN, S.S.; KOREL', V.G.; DERBIKOV, I.V.; BARDIN, I.P., akademik, nauchnyy red.; GORBACHEV, T.F., nauchnyy red.; YEROFEYEV, N.A., nauchnyy red.; NEKRASOV, N.N., nauchnyy red.; SKOBNIKOV, M.L., nauchnyy red.; SMIRNOV-VERIN, S.S., nauchnyy red. [deceased]; STRUMILIN, S.G., akademik, nauchnyy red.; KHLEBNIKOV, V.B., nauchnyy red.; CHINAKAL, N.A., nauchnyy red.; SLEDZYUK, P.Ye., red.toma; SOKOLOV, G.A., red.toma; BOLDYREV, G.P., red.; VOGMAN, D.A., red.; KASATKIN, P.F., red.; KUDASHEVA, I.G., red.izd-va; KUZ'MIN, I.F., tekhn.red.

[Iron-ore deposits of the Altai-Sayan region] Zhelezorudnye mesto-rozhdeniia Altae-Saianskoi gornoi oblasti. Vol.1. Book 1. [Geology]

(Continued on next card)

POSPELOV, G.L.---(Continued) Card 2.

Geologiia. Otvetstvennyi red. I.P. Bardin. Moskva. 1958. 330 p. (MIRA 12:2)

1. Akademiya nauk SSSR. Mezhduvedomstvennaya postoyannaya komissiya po zhelezu. 2. Postoyannaya mezhduvedomstvennaya komissiya po zhelezu Akademii nauk SSSR (for Pospelov, Shapiro, Sokolov). 3. Zapadno-Sibirskiy filial Akademii nauk SSSR (for Vakhrushev, Pospelov.) 4. Zapadno-Sibirskoye geologicheskoye upravleniye (for Sakovich). 5. Krasnoyarskoye geologicheskoye upravleniye (for Pan). 6. Zapadno-Sibirskiy geologo-razvedochnyy trest Chermetrazvedka (for Prodanchuk). 7. Sibirskiy geofizicheskiy trest (for Pipar). 8. Vsesoyuznyy geologicheskiy nauchno-issledovatel'skiy institut (for Dodin). 9. Gornaya ekspeditsiya (for Mitropol'skiy). 10. Gornoye upravleniye Kuznetskogo metallurg.kombinata (for Lukin). 11. Tomskiy politekhnicheskiy institut (for Zimin). 12. Sibirskiy metallurg.institut (for Korel'). 13. Trest Sibneftegeofizika (for Derbikov). (Altai Mountains---Iron ores) (Sayan Mountains---Iron ores)

BELOUS, N.Kh.; KLYAROVSKIY, V.M.

Genetic classification of iron-ore shows in southern central Siberia. Trudy Inst.geol.i geofiz.Sib.otd.AN SSSR no.4:43-59 '60. (MIRA 15:7)

(Siberia, Western—Iron ores—Classification)

BELOUS, N.Kh.; NIKOLAYEVA, I.V.

Iron phsophate formations in the central part of the Western Siberian iron-ore basin. Trudy Inst.geol.i geofiz.Sib.otd.AN SSSR no.4:85-98 '60. (MIRA 15:7)
(Siberia, Western—Iron phosphates)

BELOUS, M.Kh.

Recent iron deposition in the Irba region of the Eastern Sayan Mountains. Trudy Inst.geol.i geofiz.Sib.otd.AN SSSR no.4:105-110 '60. (MIRA 15:7)

(Bol'shaya Irba Valley--Iron ores)

BELOUS, N.Kh.

Genetic types and facies features of marine iron deposits in central Siberia. Trudy Inst.geol.i geofiz.Sib.otd.AN SSSR no.4:121-131 '60. (MIRA 15:7)
(Siberia--Iron ores)

BELOUS, N.Kh., st. nauchn. sotr.; KAZANSKIY, Yu.P.; VROVIN, V.V., KLYAROVSKIY, V.M., KUZNETSOV, V.F.; NIKOLAYEVA, I.V., NOVOZHILOV, V.I.; SENDERZON, E.M.; AKAYEV, M.S.; BABIN, A.A.; BERDNIKOV, A.P.; GORYUKHIN, Ye.Ya.; NAGORSKIY, M.P., PIVEN', N.M.; BAKANOV, G.Ye., GEBLER, I.V.; SMOLYANINOV, N.M.; SMOLYANINOVA, S.I.; YUSHIN, V.I., D'YAKONOVA, N.D., REZAFOV, N.M.; KASHTANOV, V.A., GOL'BERT, A.V., SIBGROV, A.P.; GARMASH, A.A.; LYKOV, N.S., BORODIN, L.V.; AYCHKOV, L.F.; KUCHIN, M.I.; SHAKHOV, F.N., glav. red.; SHLAKOVSKAYA, L.I., red.

[West Siberian iron ore basin] Zapadno-Sibirskii zhelezorudnyi bassein. Novosibirsk, Red.-izd. otdel Sibirskogo otdeleniia AN SSSR, 1964. 447 p. (MIRA 17:12)

1. Akademiya nauk SSSR, Sibirskoye otdeleniye. Institut geologii i geofiziki. 2. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR (for Belous, Kazanskiy, Vrovin, Klyarovskiy, Kuznetsov, Nikolayeva, Novozhilov, Senderzon). 3. Institut gornogo dela (for Akayev). 4. Novosibirskoye geologicheskoye upravleniye Ministerstva geologii i okhrany nedr SSSR (for Babin, Berdnikov, Goryukhin, Nagorskiy, Piven').

(Continued on next card)

BELOUS, N.Kh.---(continued). Card 2.

Tomskiy politekhnicheskiy institut (for [illegible] Smolyaninov, Smolyaninova). 5. Sibirskiy [illegible] issledovatel'skiy institut geologii, geofiziki i mineral'nogo syr'ya(for Yushin, D'yakonova, Re[illegible]pov, Kushtanov, Gol'bert). 6. Institut ekonomiki sel'skogo khozyaystva (for Garmash). 7. Sibirskiy metallurgicheskiy institut (for Bykov, Borodin, Rychkov). 8. Tomskiy inzhenerno-stroitel'nyy institut (for Kuchin). 9. Chlen-korrespondent AN SSSR (for Shakhov).

BELOUS, N.Kh.; NOVOZHILOV, V.I.

Paragenesis of exhalative-sedimentary iron and pyrite ores in the Mayna deposit. Trudy SNIIGGIMS no.35:101-111 '64.

(MIRA 18:5)

L 2639-66 [illegible]

ACC NR: AP5022353 [illegible] SOURCE CODE: UR/0135/65/000/[illegible]

AUTHOR: Belous, N. N. (Engineer)

ORG: Proektstal'konstruktsiya

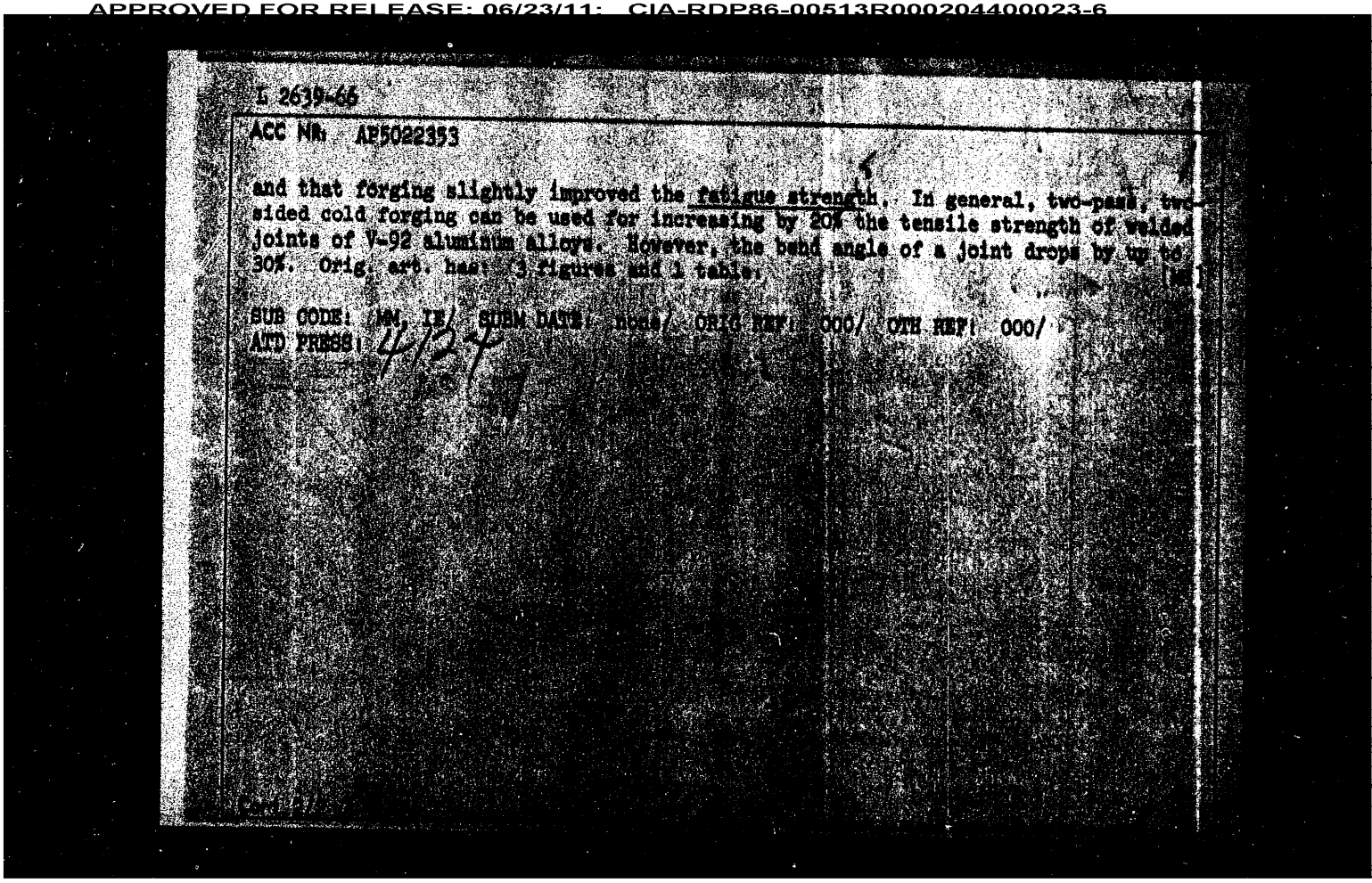
TITLE: Strengthening welded joints of V-92 aluminum alloy by forging

SOURCE: Svarochnoye proizvodstvo, no. 9, 1965, 41

TOPIC TAGS: aluminum alloy, magnesium containing alloy, alloy welding, weld forging, weld strength/V-92 aluminum alloy

ABSTRACT: Plates (150 x 300 x 12 mm) of V-92 aluminum-base alloy (3.7% Mg, 3% Zn) were TIG welded in two passes with V-92-alloy filler wire in an automatic ADSP-2 welder. After cooling, the welds were cold forged with a pneumatic hammer in 3 to 4 passes on one or both sides and naturally aged for 10 days. The unforged weld metal had a tensile strength of 29.7—34.1 kg/mm² and a bend angle of 20—43 deg, compared with 44.4 kg/mm² and 67 deg for the parent alloy. One-sided or two-sided forging increased the weld tensile strength to 31.1—39.4 and 35.9—40.2 kg/mm², respectively, and lowered the bend angle to 24—11 and 26—13 deg, respectively. Ultrasonic inspection revealed no cracks in the forged weld. Forging also increased somewhat the weld hardness. Vibratory fatigue tests at a vibration frequency of 660 cycles per minute and an amplitude coefficient of 0.1—0.25 showed that the fatigue strength of the unforged weld was much lower than that of the parent metal;

UDC: 621.791.052:669.715:621.771



L 2639-66

ACC NR: AP5022353

and that forging slightly improved the fatigue strength. In general, two-pass, two-sided cold forging can be used for increasing by 20% the tensile strength of welded joints of V-92 aluminum alloys. However, the bend angle of a joint drops by up to 30%. Orig. art. has: 3 figures and 1 table.

SUB CODE: MM, IE/ SUBM DATE: none/ ORIG REF: 000/ OTH REF: 000/

ATD PRESS: 4127

BELOUS, N. N.

PA 20/49T44

USSR/Engineering
Welding, Antogenous
Cutting Torches

Sep 48

"Automatic Welding and Cutting in Locomobile Construction," N. N. Belous, Engr, Lyudino Locomobile Constr Plant, 3½ pp

"Avtogennoye Delo" No 9

Lyudino plant was first in USSR to produce all-welded locomobile boilers (in 1931). In 1940-41 plant began to use rapid automatic welding. Describes difficulties encountered, and how these were overcome. Includes one sketch, and eight photographs.

20/49T44

BELOUS, N. N.

22477. Belous, N. N. Proizvodstvo svarnykh zharovykh trub. avtogen. delo. 1949, No. 7, s 20-21.

SO: LETOPIS' No. 30, 1949

[illegible], [illegible]

Electric wel[illegible] [illegible] gas cutt[illegible] at the Li[illegible] [illegible]ile [illegible].
Avt[illegible]. [illegible]elo 23 no. [illegible], 195[illegible]

BELOUS, N.N

AID P - 4820

Subject : USSR/Engineering

Card 1/1 Pub. 107-a - 6/13

Author : Belous, N. N.

Title : Welding of gears under protection of carbon dioxide

Periodical : Svar. proizv., 3, 20-22, Mr 1956

Abstract : A brief description of arc welding of gears up to 1,200 mm in diameter by a melting electrode under protection of carbon dioxide. Results obtained on mechanical properties of the welded seams are presented. The author also describes the alterations in the PSh-5 welding semi-automatic apparatus used for the job. Three tables, 4 drawings and 1 photo, GOST and OST standards. 5 Russian references (1952-55).

Institution : Institute for Design of Steel Constructions (Proektstal'-konstruktsiya) and Central Scientific Research Institute of Machine-Building Technology (TsNIITMASh).

Submitted : No date

AUTHOR: Belous, N.N., Engineer SOV/135-59-1-15/18

TITLE: Torches for Automatic and Semiautomatic Welding in Carbon Dioxide (Gorelki dlya avtomaticheskoy i poluavtomaticheskoy svarki v uglekislom gaze)

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 1, pp 43-45 (USSR)

ABSTRACT: The technological section of "Proyektstal'konstruktsiya" Institute developed new designs of torches for automatic and semiautomatic welding with fusing electrodes in carbon dioxide. In the automatic welding torches, the electrode is not, as previously, placed inside the gas feed nozzle, but the gas feed is performed by a separate tube. For the purpose of determining the fusion depth and changes in the seam dimensions, tests were performed which proved that the width and shape of the seam depended on the welding rate and not on the internal diameter of the gas conduit. The information includes a description of a semi-

Card 1/2

Torches for Automatic and Semiautomatic Welding in Carbon Dioxide

automatic welding torch, replacing water-cooled torches, which proved satisfactory in practical use. There are 2 photos, 3 sets of microphotos, 3 tables and 1 diagram.

ASSOCIATION: Proyektstal'konstruktsiya

S/135/60/000/007/011/014
A006/A002

AUTHOR: Belous, N.N., Engineer

TITLE: A Modernized Semi-Automatic Machine for Welding Aluminum

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 7, p. 37

TEXT: A combination of pushing and pulling feed rollers has been used to eliminate the difficulties in feeding the soft aluminum electrode wire through the metal guide hose to the pistol in a modernized semi-automatic machine for welding aluminum alloys. The device was assembled on the basis of the "ПДШМ-500" (PDShM-500) and the "ПШП-10" (PShP-10) semi-automatic welding machines. The arrangement of the units and the electric circuit diagram are shown. The electrode wire is pushed through the metal hose into the pistol by the roller located in the wire feed mechanism. The pulling rollers of the pistol rotate at a greater peripheral speed than the pushing rollers. This prevents the detention of the wire in the hose. Welding is performed under various conditions and with different compositions of the wire. The wire and the shielding gas feed in the welding zone is performed by pressing the micro-switch button, located on the handle of the welding pistol. The practical use of the welding machine proved the advantage

Card 1/2

S/135/62/000/001/006/007
A004/A101

AUTHOR: Belous, N.N., Engineer

TITLE: Automatic CO_2-shielded arc welding of low-alloy 15ХСНД (15KhSND) grade steel

PERIODICAL: Svarochnoye proizvodstvo, no. 1, 1962, 28 - 31

TEXT: The author presents the results of research work to determine the technology and conditions of the semi-automatic CO_2-shielded arc welding of low-alloy 15KhSND grade steel of 14 mm thickness. The requirements of low-alloy steel welding are determined by the "Instructions for the manufacture of steel structures from low-alloy НЛ-2 (NL-2) grade steel" (И 221-56 [I221-56] MPS MKhP): Tensile strength not less than 48 kg/mm^2, notch toughness of the welding joint metal not less than 12 kgm/cm^2, hardness of the near-seam zone not higher than HV 275; besides, the notch toughness along the fusion line should not be less than 4 kgm/cm^2 at a temperature of -40°C. The composition of the 15KhSND grade steel is (in %): 0.16 C, 0.55 Mn, 0.49 Si, 0.58 Ni, 0.8 Cr, 0.42 Cu, 0.04 S and 0.09 P. The author gives a description of the welding tests carried out and the equipment used. The welding current source was a ПС-500 (PS-500) generator,

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while welding was effected on the ПДШ-500 (PDSh-500) semi-automatic welder. The main welding parameters are listed in a table. Another table shows the chemical composition of the seam metal welded with electrode wire of different grades. The maximum hardness was obtained in the near-seam zone, independent of the electrode grade and diameter. The test results revealed that the electrode wire diameter and the manganese content of the electrode affect the notch toughness of the seam metal to a great extent. The investigations showed that the best results in the semi-automatic CO_2-shielded arc welding of low-alloy 15KhSND steel are obtained with Св-08Г2СА (Sv-08G2SA) electrode wire according to ТУ 2-57 (TU-2-57) Mosgorsovnarkhoz or Св-08Г2С (Sv-08G2S) according to ГОСТ (GOST) 2246-60 and the following welding parameters: with an electrode wire diameter of 1, 1.6 and 2 mm, a welding current of 70 - 110, 180 - 280, and 280 - 440 amp respectively, an arc voltage of 18 - 22, 24 - 28 and 26 - 32 v and a gas consumption of 1 - 1.2, 1.2 - 1.4 and 1.2 - 1.4 m^3/hour respectively. There are 6 figures and 7 tables.

ASSOCIATION: "Proyektstal'konstruktsiya"

ACCESSION NR: AP4040704 S/0135/64/000/006/0034/0036

AUTHOR: Belous, N. N. (Engineer)

TITLE: Ultrasonic inspection of welded joints of aluminum alloys

SOURCE: Svarochnoye proizvodstvo, no. 6, (630), 1964, 34-36

TOPIC TAGS: aluminum, butt weld, argon, arc welding, electrode, defectoscope, ultrasonic equipment, defectoscope UZD 7n, defectoscope UZD 60, welder ADSP 2, aluminum alloy V92, aluminum alloy AMg6, oxide, slag

ABSTRACT: The possibility of ultrasonic inspection of aluminum welds was studied experimentally to provide additional information. Procedures for the detection of defects like pores, slag inclusions, oxide scabs, incomplete penetration, and cracks were developed. Basically, these procedures are the same as for carbon steel and low-alloy steel, and are performed with the same instruments: UZD-7n (2.5 megacycles) and UZD-60 (1.8 megacycles) defectoscopes. A sample of steel St.3 was tested simultaneously with alloy V92 or AMg6 samples. Aluminum samples were argon arc-welded with fusible electrodes in the welding device ADSP-2. Artificial defects were introduced into the welds.. The tests showed no direct relation between the defectoscope impulse and the nature of the defect.

Card 1/2

ACCESSION NR: AP4040704

After the presence of a flaw was established, its position was determined by the depth-measuring device of the defectoscope. Subsequently the same seam was x-rayed, and the results were compared. Ultrasonic detection proved to be more reliable because it showed the oxide inclusions not revealed by x-ray analysis. The accuracy of this method was also sustained by the metallographic investigation. Orig. art. has: 4 figures.

ASSOCIATION: Institut "Proyektstal'konstruktsiya" (Institute "Proyektstal'konstruktsiya")

SUBMITTED: 00 ENCL: 00

SUB CODE: MM NO REF SOV: 002 OTHER: 000

Card 2/2

BELOUS, N.N., inzh.

Increasing the strength of weld joints in B-92 aluminum alloy by peening. Svar. proizv. no.9:41 S '65. (MIRA 18:9)

1. Gosudarstvennyy institut po proyektirovaniyu, issledovaniyu i ispytaniyu stal'nykh konstruktsiy i mostov.

KABO, L.D.; LITVIN, N.A., kand. sel'skokhoz. nauk; BELOUS, N.V.; VASILENKO, L.D.; ZEYFERT, O.A.; KOVALEV, F.V.; TURULEV, V.K., aspirant

Sorgo as a valuable crop. Zemledelie 27 no.4:52-61 Ap '65. (MIRA 18:4)

1. Nachal'nik Upravleniya zernovykh i kormovykh kul'tur Ministerstva proizvodstva i zagotovok sel'skokhozyaystvennykh produktov Uzbekskoy SSR (for Kabo). 2. Ukrainskiy nauchno-issledovatel'skiy institut oroshayemogo zemledeliya (for Litvin, Belous, Vasilenko). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut agrolesomelioratsii (for Zeyfert). 4. Donskoy sel'skokhozyaystvennyy institut (for Kovalev, Turulev).

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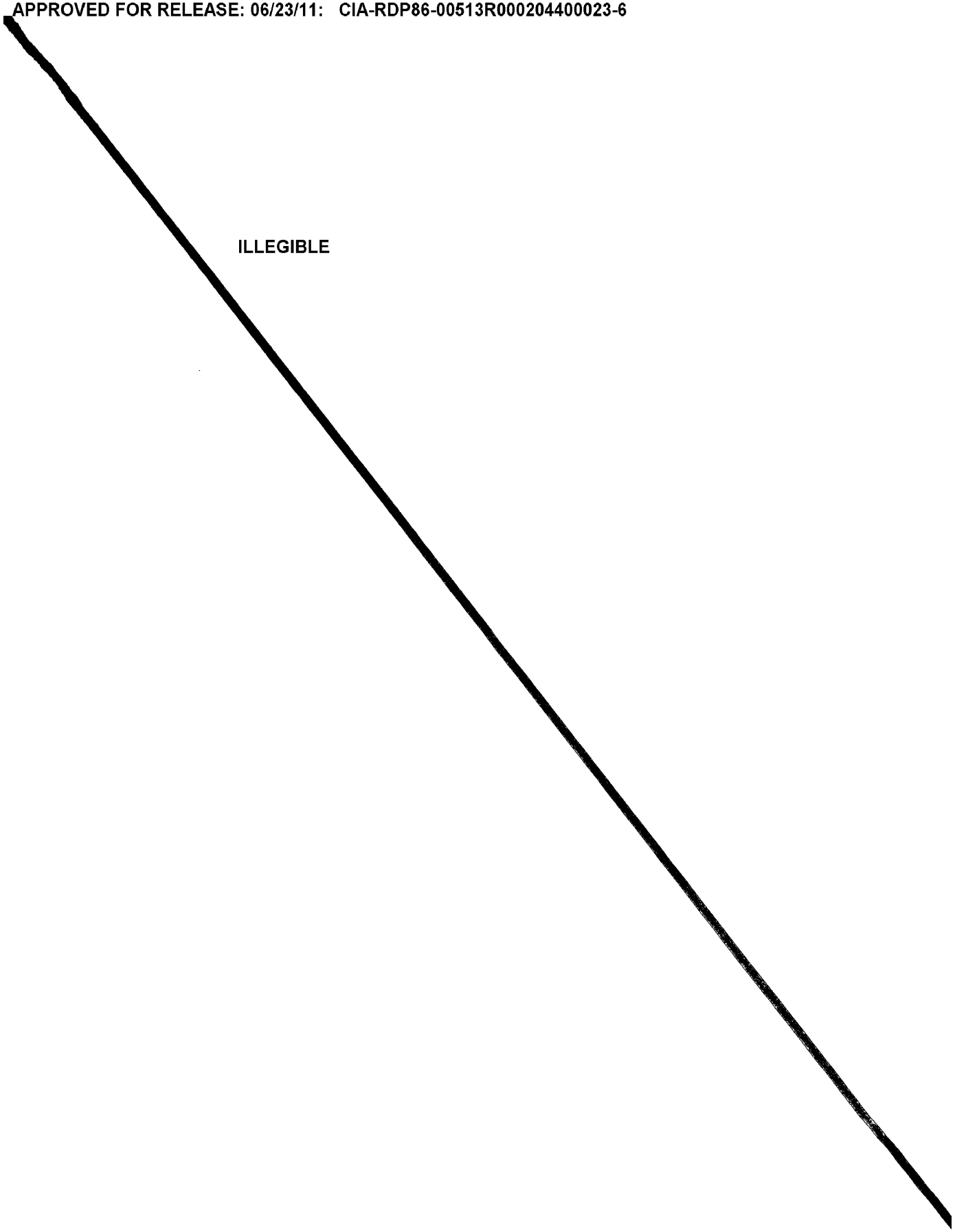

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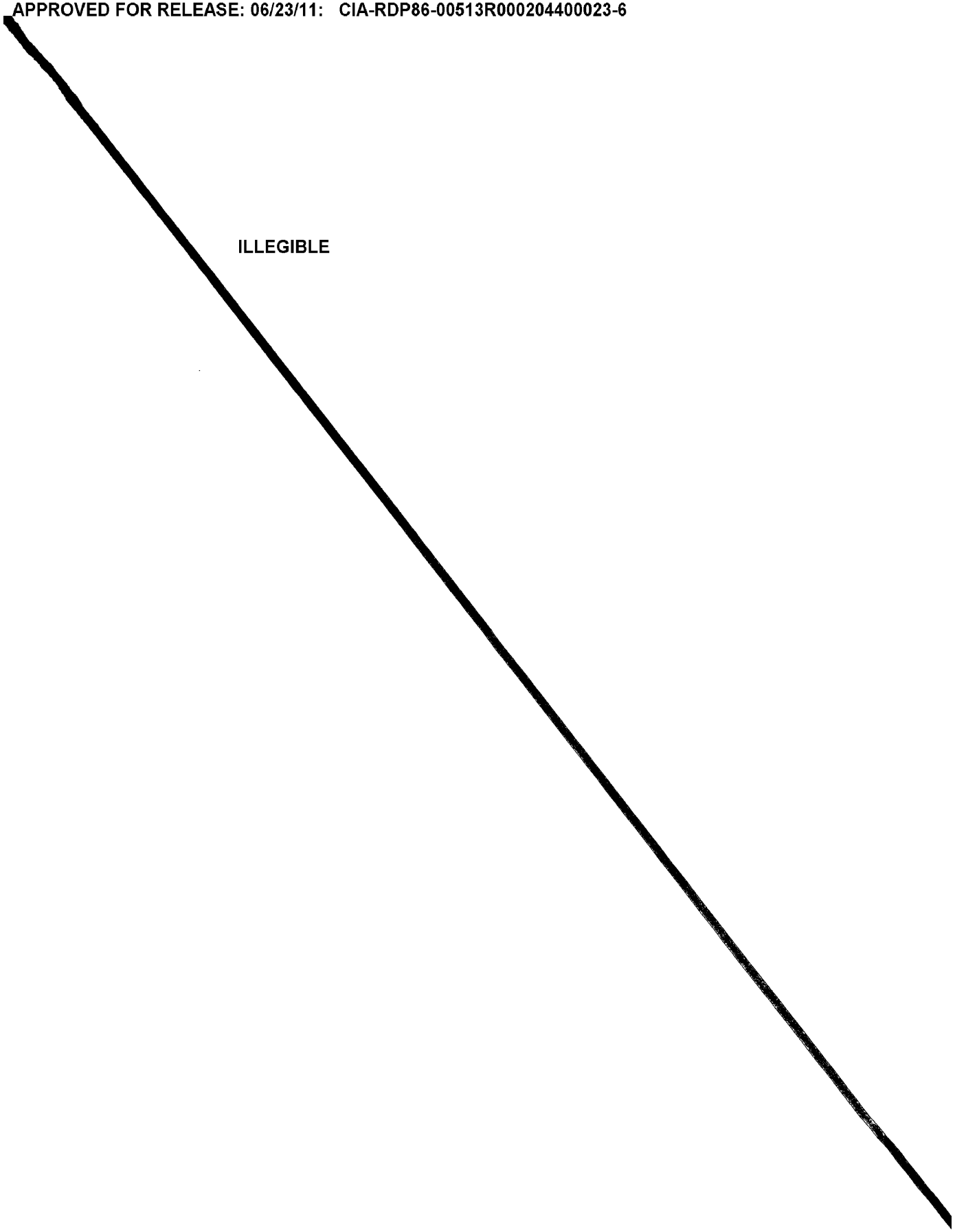

USSR/Soil Science. Organic Fertilizers J-6

Abs Jour : Ref Zhur - Biol., No 20, 1958, No 91484

Author : Belous P.G.
Inst : Kharkov Univ.
Title : The Dosage of Humic Acid in Irrigation

Orig Pub : V sb.: Gumusovyye udobreniya, Khar'kov, Khar'kovsk. un-t, 1957, 371-374

Abstract : No abstract

Card : 1/1

OLEYNIK, F.M. [Oliinyk, F.M.], dotsent; BELOUS, P.G. [Bilous, P.H.], dotsent

What the Kherson method proves. Mekh. sil'. hosp. 14 no.3: 14-17 Mr '63. (MIRA 17:1)

1. Khersonskiy sel'skokhozyaystvennyy institut.

L 04181-67 EWT(m)/T/EWP(t)/ETI/EWP(k) IJP(c) JD/HW/GD
ACC NR: AT6026904 SOURCE CODE: UR/0000/66/000/000/0025/0032

AUTHOR: Belous, O. A.; Gridnev, V. N.; Yefimov, A. I.; Kushnareva, N. P.

ORG: none

TITLE: Effect of annealing temperature and purity on high temperature internal friction in nickel

SOURCE: AN SSSR. Institut metallurgii. Vnutrenneye treniye v metallakh i splavakh (Internal friction in metals and alloys). Moscow, Izd-vo Nauka, 1966, 25-32

TOPIC TAGS: internal friction, high temperature, temperature dependence, high purity metal, plastic deformation, impurity content, grain size, recrystallization, annealing

ABSTRACT: Internal friction in the 200-900°C range on deformed and annealed nickel of 99.9%, 99.99% and higher purity was studied. The nickel was drawn about 95% and the wire samples were annealed at different temperatures. Internal friction was measured on a torsion pendulum operated at 1.7-2 cps. Changes in internal friction are given as functions of test temperature for samples previously annealed at 300 to 1200°C. At 200°C the background was greatest for samples annealed at the lower temperatures as a result of the increased amount of crystal lattice defects. For all annealing temperatures, a grain boundary relaxation peak occurred at 410-430°C, the height of which de-

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L 04181-67

ACC NR: AT6026904

3

creased with rise in annealing temperature. In 99.9% nickel, the peak was unsymmetrical due to auxiliary relaxation processes occurring at 550-700°C. A metallographic examination showed that the recrystallization temperature of 99.9% nickel was 350°C. The grain size of 99.9%, 99.99% and electron beam remelted nickel are given as a function of annealing temperature. A heterogeneous grain structure was observed at 600-700°C. The largest grain growth occurred in the purest material: electron beam remelted nickel. In nickel of lower purity, the slow grain growth, even at an annealing temperature of 1200°C, was caused by the impedance of grain boun/ary migration due to impurities. The height of the grain boundary peak decreased with grain size and impurity content. For 99.99% nickel, two internal friction peaks occurred, one at 400-440°C and the other at 620-630°C. The heights of both peaks decreased with a rise in annealing temperature or grain size. In 99.99% nickel, a heterogeneous grain structure was recrystallized at 600°C, at which point the height of the peaks dropped sharply. The 625°C peak height increased with a rise in internal friction heating rate. It also decreased monotonically as a result of maintaining the sample at 625°C for periods up to 1 hr during internal friction testing. This peak was related to secondary recrystallization in the 99.99% nickel since the activation energy of recrystallization was higher than that of grain boundary relaxation. In electron beam melted nickel an extreme amount of background damping was observed in deformed samples. This damping became negligible after annealing at 300°C. Only one peak, corresponding to grain boundary relaxation, occurred in the 460-490°C range for the ultrapure nickel. However, anneal-

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L 04181-67

ACC NR: AT6026904

ing above 1000°C shifted this peak to the 600-625°C range. This change was associated with substructure formation under axial loading (25 g/mm^2) imposed at the higher temperatures. Orig. art. has: 6 figures.

SUB CODE: 11,20/ SUBM DATE: 02Apr66/ ORIG REF: 009/ OTH REF: 006

Card 3/3 LC

L 04183-67 EWT(m)/T/EWP(t)/ETI IJP(c) JD/JG/GD
ACC NR: AT6026909 SOURCE CODE: UR/0000/66/000/000/0056/0062

AUTHOR: Belous, O. A.; Gridnev, V. N.; Yefimov, A. I.; Mil'man, Yu. V.; Trefilov, V. I.

ORG: none

TITLE: The effect of annealing temperature on Q^{-1} and G-purity chromium and alloys of chromium with yttrium and gadolinium

SOURCE: AN SSSR. Institut metallurgii. Vnutrenneye treniye v metallakh i splavakh (Internal friction in metals and alloys). Moscow, Izd-vo Nauka, 1966, 56-62

TOPIC TAGS: internal friction, annealing, temperature dependence, chromium, high purity metal, yttrium, gadolinium, metallographic examination, grain structure, dislocation effect

ABSTRACT: The effect of annealing temperature on temperature dependent internal friction was studied in zone melted chromium, Cr + 1% Y, and Cr + 1% Gd. Wire samples of 0.8 mm diameter were drawn at 300°C to about 95%. These wires were annealed before testing for 1 hr at temperatures ranging from 100 to 1100°C. At low testing temperatures the internal friction in the pure chromium was twice as low as that in the alloys. In all cases, the internal friction decreased as a function of annealing temperature; in zone refined chromium, the internal friction dropped from $15 \cdot 10^{-4}$ to $5 \cdot 10^{-4}$ after annealing to 300°C; in Cr + 1% Y, the internal friction decreased at 50°C after

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L 04183-67
ACC NR: AT6026909

annealing up to 600°C. These changes were partially caused by the redistribution of interstitial impurities during annealing. Transmission electron microscopy showed that the density and distribution of dislocations did not change after annealing up to 400°C. Thus in the alloys the internal friction decrease was caused by polygonization. Microstructures did not show any differences between pure chromium and the alloys that would account for the internal friction recovery. At high testing temperatures, the internal friction increased sharply due to grain boundary relaxation. The rise in internal friction at high temperatures was the same for all of the metals. The shift in initial rise of internal friction with annealing was caused by a decrease in both dislocation density and grain boundary area. After annealing at similar temperatures, the value of internal friction was highest in the alloys, due to the retardation of recrystallization by alloying. In the 300-600°C temperature range, the change in Q^{-1} was caused by polygonization in Cr + 1% Y (the recrystallization temperature of Cr-Y is above 800°C), while in pure chromium above 600°C it was due to recrystallization. Internal friction peaks occurred at 900°C in pure chromium at an oscillation frequency of 2.8 cps. In Cr + 1% Gd a similar grain boundary peak occurred at 960-970°C at a frequency of 2.1 cps. In Cr + 1% Y the peak was not observed because alloying with yttrium raised the peak into a higher temperature range. The temperature dependence of the square of the frequency is proportional to the shear modulus. Deviations from linearity were observed in the same temperature range where the sharp rise in Q^{-1} was observed. This change in shear modulus was caused by grain boundary relaxation and lat-

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L 04183-67
ACC NR: AT6026909

3

tice inhomogeneity. The authors express their gratitude to V. G. Epifanov of the Institute of Metal Physics, AN UkrSSR for supplying the zone melted chromium, produced by three zone passes. Orig. art. has: 4 figures.

16

SUB CODE: 11,20/ SUBM DATE: 02Apr65/ ORIG REF: 011/ OTH REF: 008

Card 3/3 ZC

SPERANSKIY, N.I.;BELOUS, S.R.

Regional leukocytosis in inflammatory and necrotic diseases of the heart. Ter. arkh., Moskva 25 no.4:76-83 July-Aug 1953. (CLML 25:4)

1. Docent for Speranskiy; Laboratory Physician for Belous. 2. Of the Hospital Therapeutic Clinic (Director -- Prof. A. L. Myasnikov, Active Member AMS USSR) of First Moscow Order of Lenin Medical Institute.

BELOUS, S.R.

Diagnostic value of the coagulation test (Weltmann's reaction). Terap.arkh. 28 no.7:68-75 '56. (MLRA 10:1)

1. Iz gospital'noy terapevticheskoy kliniki (zav. - deystvitel'nyy chlen AMN SSSR prof. A.L.Myasnikov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova.
(WELTMANN TEST, statist.
diag. value)

CHERNYSHEVA, Ye.V., kand.med.nauk, BELOUS, S.R.

Comparative studies on morphological in vivo changes in the liver with functional variations. Terap. arkh. 30 no.7:37-43 Jl'58 (MIRA 11:8)

1. Iz gospital'noy terapevticheskoy kliniki imeni A.A. Ostroumova (dir. - deystvitel'nyy chlen AMN SSSR prof. A.L. Myasnikov) I-go Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.
(LIVER, physiology
relation of morphol. intravital changes on funct. (Rus))

GERASIMOVA, Ye. N.; BELOUS, S.R.

Electrophoretic determination of blood proteins in liver diseases. Terap. arkh. 30 no.12:66-71 D '58. (MIRA 12:1)

1. Iz gospital'noy terapevticheskoy kliniki (dir. - deystvitel'nyy chlen AMN SSSR prof. A.L. Myasnikov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.
(BLOOD PROTEINS, determination,
in liver dis., electrophoresis (Rus))
(LIVER DISEASES, blood in,
proteins, electrophoresis (Rus))

BELOUS, S.R.

Determination of prothrombin in the blood of patients with polyglobulia. Sov.med. 23 no.11:106-109 N '59. (MIRA 13:3)

1. Iz gospital'noy terapevticheskoy kliniki (direktor - deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR prof. A.L. Myasnikov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.
(PROTHROMBIN TIME chemistry)
(POLYCYTHEMIA VERA blood)

BELOUS, S.R.

Use of a glass turbidity standard for the evaluation of the thymol test. Lab.delo 5 no.4:18-19 Jl-Ag '59. (MIRA 12:12)

1. Iz gospital'noy terapevticheskoy kliniki I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova (dir. - prof. A.L. Myasnikov).
(TURBIDITY) (THYMOL)

BELOUS, T.

Balance of payment and the foreign exchange of capitalist countries. Den. i kred. 20 no.11:74-83 N '62. (MIRA 16:1)

(Balance of payment) (Foreign exchange)

MANUKYAN, A.A.; RYDVANOV, N.F.; BELOUS, T.Ya.; SVIRIDOVA, Z.P.; CHEBOTAREVA, Ye.A.; SHUMILIN, V.I.; PUDINA, K.V.; LUTSKAYA, Ye.Ye.; BRAGINA, N.M.; SANDAKOV, V.A.; MUSSO, S.; ZABLOTSKAYA, A.I.; VDOVICHENKO, D.I.; MIRKINA, I.Z.; MORENO, I.; SIDOROV, V.F.; MOKLYARSKIY, B.I.; GRECHIKHIN, A.A.; KOSOVA, V.A.; KULIKOV, N.I.; ZHDANOVA, L.P.; ROZENTAL', Ye.I.; PETRANOVICH, I.M.

[Economic conditions of capitalist countries; survey of economic trends in 1961 and the beginning of 1962] Ekonomicheskoe polozhenie kapitalisticheskikh stran; kon'iunkturnyi obzor za 1961 g. i nachalo 1962. g. Moskva, Izd-vo "Pravda," 1962. 157 p. (MIRA 16:9)

1. Sotrudniki kon"yunkturnogo sektora Instituta mirovoy ekonomiki i mezhdunarodnykh otnosheniy AN SSSR.
(Economic history)

CASLER, Gh., prof.; BELOUS, V., lector; RENER, A., lector; CONDREA, I., asist.; ILIE, I., ing.; ZERELLES, W., ing., SCHMIDT, H., ing.

Influence of the geometry of the cutting part of helicoidal drills on the drilling dynamics of some Rumanian steels. Constr mas 15 no.8:562-569 Ag'63.

1. Institutul politehnic, Iasi (for Casler, Rener, Condrea).
2. Fabrica de scule, Risnov (for Ilie, Zerelles, Schmidt).

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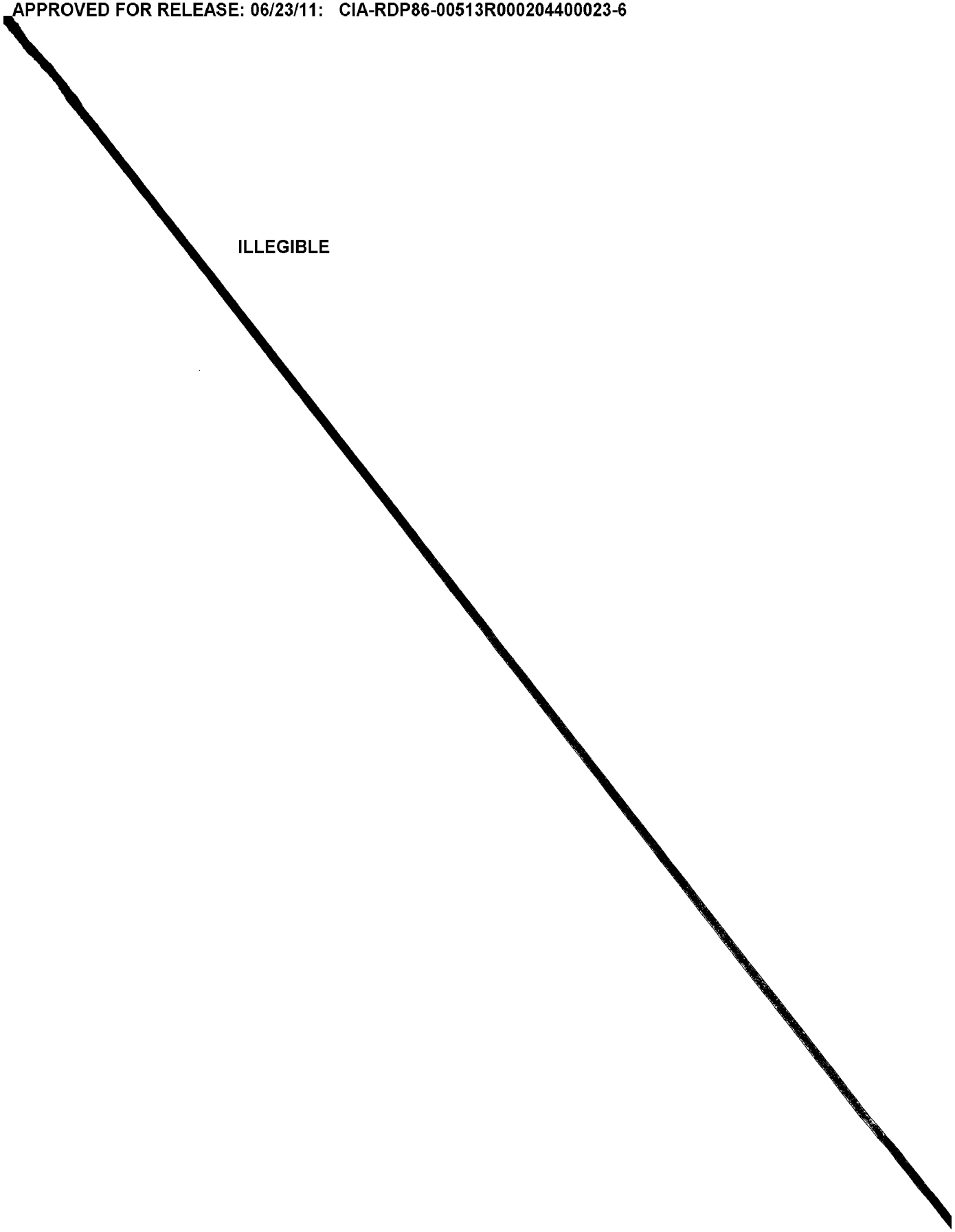

BELOUS, Vitalie, ing.

On the values of the X_p (X_M) exponents in the dynamics of metal splintering. Metalurgia si constr mas 15 no.3:254-259 Mr. '63.

1. Institutul politehnic, Iasi.

BELOUS, V.D.; GARASHCHUK, V.P.

Application of optical quantum generators to metal welding.
Avtom. svar. 16 no.11:94-95 N '63. (MIRA 17:1)

PAVLOV, M.S., inzh.; BOLOUS, V.G.; ZELIK, V.I.

Auxiliary conveying [illegible] hydraulic [illegible]. Ugol' 39 no. [illegible] '64. (MIRA 17:13)

1. Donetskiy nauchno-issledovatel'skiy ugol'nyy institut (for Pavlov). 2. Ukrainskiy nauchno-issledovatel'skiy institut gidrodobychi uglya (for Bolous). 3. Gidrorudnik "Pionер" (for Zelik).

BELOUS, Vladimir Akimovich
BELOUS, V. A. 157712

USSR/Electricity - Batteries - Charging Rectifiers, electric Dec 47

"Contactless Charging Devices," I. I. Kaigorodov, V. A. Belous, engineers, Plant of Min of Communications Equipment Ind USSR, 5 pp

"Elektrichestvo" No 12

Describes automatic contactless charging devices with step-charging characteristics using selenium rectifiers, operating from a mains voltage current is subjected to subsequent magnetic amplification in the circuit. Gives data on device of this type (UKZ-1) designed to charge [illegible] acid storage batteries for the electric locomotives [illegible]. Submitted 27 Jan 47.

PA 157712

BELOUS, V. M.

PA 19T92

USSR/Telegraphy, Two-tone
Telegraphy, High speed

Oct 1946

"Use of Type S-5 Apparatus for Tonal Telegraphy,"
V. M. Belous, V. A. Fishelev, 1 p

"Vestnik Svyazi - Elektro Svyaz'" No 10 (79)

The S-5 Type of apparatus has a group system of construction. This calls for great care in its installation so as not to allow for too much transfer of energy during a peak loading of any one of the channels. Discusses some of the operational characteristics of this apparatus.

19T92

BELOUS, V. M., Cand Tech Sci -- (diss) "Charging of the group tract of the apparatus of compression with use of canals for various types of couplings." Kiev, 1957. 16 pp with graphs (Min of Communication USSR, Mos Electrical Engineering Inst of Communication), 150 copies (KL, 1-58, 117)

BELOUS, V. M.

COMMUNICATION

"Loading of Channels by Service Conversations between Telephone Operators," by V. M. Belous, Elektrosvyaz', No 6, June 1957, pp 61-63

It is indicated that the group systems are not satisfactorily operated from the point of view of protecting them against overloads. A method for protecting group channels against high voltages is, occurring during service conversation between telephone operators, given.

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DIVNOGORTSEV, Gennadiy Petrovich; NOVIKOV, Vasiliy Aleksandrovich; REZVYAKOV, Aleksandr Petrovich. BELOUS, V.M., kand.tekhn.nauk, retsenzent; YAKUB, Yu.A., kand.tekhn.nauk, retsenzent; NOVIKOV, V.A., otv.red.; BALAKIREV, A.F., red.; KARABILOVA, S.F., tekhn.red.

[Theory of long-distance communications] Teoriia dal'nei sviazi. Izd.3., perer. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1960. 494 p. (MIRA 13:12)
(Telecommunication)

DIVNOGORTSEV, Gennadiy Petrovich;NOVIKOV, Vasiliy Aleksandrovich; FARBER, Yuliy Davidovich; BELOUS, V.M., kand. tekhn. nauk, retsenzent; YAKUB, Yu.A., kand. tekhn. nauk, retsenzent; NOVIKOV, V.A., otv. red.; PETROVA, V.Ye., red.; SHEFER, G.I., tekhn.red.

[Long-distance communications apparatus] Apparatura dal'nei sviazi. Moskva, Gos. izd-vo lit-ry po voprosam sviazi i radio, 1961. 439 p. (MIRA 14:11)

(Radio relay lines) (Telephone)

BELOUS, V.M., starshiy nauchnyy sotrudnik, kand.tekhn.nauk; GIZETULO, V.A.; GONTA, V.I.

Communication service equipment. Vest. sviazi no.2:11-13 F '63. (MIRA 16:2)

1. Kiyevskoye otdeleniye Tsentral'nogo nauchno-issledovatel'skogo instituta svyazi Ministerstva svyazi SSSR (for Belous).
(Telecommunication) (Telephone lines—Noise)

BELOUS, V.M., [Bilous, V.M.]

Electron localization levels of silver halide phosphors and the de-excitation action of the exciting light. Ukr.fiz.zhur. 6 no.6: 735-738 N-D '61. (MIRA 16:5)

1. Odessikiy gosudarstvennyy universitet im. Mechnikova.
(Silver halides) (Luminescence)

BELOUS, V.M. [Bilous, V.M.]; GOLUB, S.I. [Holub, S.I.]

Effect of infrared light on the luminescence of pure and mixed silver halide phosphors. Ukr.fiz.zhur. 6 no.6:738-742 N-D '61. (MIRA 16:5)

1. Odesskiy gosudarstvennyy universitet im. Mechnikova.
(Silver halides) (Luminescence) (Infrared rays)

BELOUS, V.M.; D'YACHENKO, N.G.

Effect of infrared light on the luminescence of silver chloride.
Opt.i spektr. 10 no.5:649-652 My '61. (MIRA 14:8)
(Infrared rays) (Silver chloride) (Luminescence)

BELOUS, V.M.

Effect of redistribution of electrons among localized levels in silver-halide phosphors, and the stimulating action of the exciting light. Opt. i spektr. 11 no.3:431-433 S '61.
(MIRA 14:9)

(Luminescent substances) (Silver halides)

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B117/B209

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AUTHORS: Belous, V. M. and D'yachenko, N. G.

TITLE: Effect of infrared light on the luminescence of silver chloride

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 4, 1961, 547-548

TEXT: The present paper has been read at the 9th Conference on Luminescence (Crystal Phosphors). The authors have studied the effect of infrared light (from КС-19 (KS-19) and ИКС-3 (IKS-3) filters) upon the light blue luminescence of AgCl. Luminescence was excited by the 366-mμ line with the samples being cooled down to the temperature of liquid air. The light blue luminescence was isolated through an СЗС-18 (SZS-18) filter and recorded by an ФЭУ-19М (FEU-19M). The voltage pulses from the photomultiplier was fed into an ЭНО-1 (ENO-1) cathode-ray oscilloscope. When infrared radiation was turned on during a constant excitation by light, a flashing and subsequent extinction of luminescence was found to take place. Turning off the infrared light is accompanied by a brief attenuation

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Effect of infrared light on the ...

of luminescence (negative flash) and by a slow increase in brightness to its steady value. A flash of light blue luminescence (length of the flash about 10 sec^{-1}) can be observed when infrared light is turned on some time after the exciting radiation has been turned off. A repeated application of infrared light does not lead to this effect if the intensity of this radiation exceeds a certain limit. These first results lead to the following conclusion: Under the action of the light exciting the AgCl phosphor, recombination of one part of the electrons and subsequent radiation takes place. The other part is trapped by adhesion levels (traps). When the infrared light is turned on, the electron escape from the traps entails a flash of the light blue luminescence. The intensity of this flash may serve as a measure of the number of electrons stored on these levels, if the intensity of the infrared light is sufficient to free the adhesion levels from electrons. The intensity of the light flash depends hyperbolically on the time between turning-off of the exciting light and turning-on of the infrared light. The dependence of the light flash on the intensity of the exciting light was examined. It was found that the intensity of the flash decreases linearly with increasing intensity of an ultraviolet radiation. The authors ascribe this effect to the de-exciting

action of the exciting light. In the range of infrared intensities used in the experiments it was found that the intensity of the flash during excitation depends linearly on the intensity of the infrared radiation. In thermally treated AgCl samples, the authors observed a green glow which could be quenched by infrared light (without a flash). The orange luminescence of molten AgBr layers is also extinguished by infrared light (IKS-3 filter). A light flash was not observed when the infrared light was turned on. When it was turned off, the brightness of the orange band of AgBr increased considerably faster than that of the light blue bands of AgCl. These results prove the conclusion that different centers are responsible for the light blue and for the green bands of AgCl. These results are indicative of a different luminescence mechanism of the bands concerned. The authors thank T. Ya. Ser and S. I. Golub for their interest in this study. [Abstracter's note: Essentially complete translation.] There are 1 figure and 2 Soviet-bloc references.

ASSOCIATION: Institut fiziki Odesskogo gos. universiteta
(Institute of Physics of Odessa State University)

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24.7000

AUTHORS: Bugriyenko, V. I., and Belous, V. M.

TITLE: The photoelectretic state in silver chloride

PERIODICAL: Fizika tverdogo tela, v. 4, no. 6, 1962, 1427 - 1429

TEXT: The dark polarization and photopolarization of AgCl single crystals were determined at -150°C. The current that passed through specimens depolarized by light was measured with an electrometer. The crystals were grown by Bridgman's method and rolled into plates of 0.3 mm thickness. The source of light was an incandescent lamp with a water filter. As the intensity of the electric field was increased from 1 to 6 kv/cm, the depolarization currents of the dark and photopolarization rose linearly from $\sim 7 \cdot 10^{-10}$ to $\sim 48 \cdot 10^{-10}$ a, and from $\sim 12 \cdot 10^{-10}$ to $\sim 67 \cdot 10^{-10}$ a, respectively. At lower temperatures, the total polarization is essentially determined by the photopolarization. The highest charge density was $40 \cdot 10^{-9}$ coulomb/cm^2. With light of high intensity the photopolarization becomes saturated. Both kinds of polarization hyperbolically decrease in time (exponents: $\alpha = 0.95$

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